

REMARKS

Present Status of Claims

The Examiner is thanked for the thorough examination of the present application. The Office Action, however, tentatively rejected all claims. Applicant submits the foregoing amendments, in which claim 1 is cancelled (rendering moot the rejection to that claim), and claims 2 and 16 are amended. In this regard, claim 2 is amended to place in independent form, and claim 16 is amended to incorporate the subject matter of claim 17. Therefore, when addressing claim 16 herein, the rejection of claim 17 will be addressed.

Specifically, the Office Action rejected claims 1 and 16 under 35 U.S.C. 102(e) as allegedly anticipated by *Park* (US 2004/0119673). Both of these rejections are rendered moot by the amendments made herein. Claim 8 stands rejected under 35 U.S.C. 102(e) as allegedly anticipated by *Martin* (US 7,109,958). For reasons that will be discussed herein, Applicant respectfully traverses this rejection.

Claims 2-4 and 17 stand rejected under 35 U.S.C. 103(a) as allegedly unpatentable over *Park* (US 2004/0119673) in view of *Martin* (US 7,109,958). Claim 2 has been rewritten in independent form to include all of the limitations of the base claim 1. Since *Park* and *Martin* do not disclose the amended claim 2, the rejection of the that claim under 35 USC 103(a) is traversed. Since claims 3 and 17 are dependent upon the amended claims 2 and 16, respectively, the rejections of those claims should be withdrawn. Since claim 4 has been cancelled, the rejection of that claim is traversed.

Claims 5-7 and 18-21 stand rejected under 35 U.S.C. 103(a) as allegedly unpatentable over *Park* (US 2004/0119673) in view of *Martin* (US 7,109,958) and

further in view of *AAPA* (Figures 2A~2C and page 4, paragraph [006] of the specification). Since claims 5-7 and 18-21 are dependent upon the amended claims 2 and 17 and *Park*, *Martin*, and *AAPA* do not disclose the amended claims 2 and 17, these rejections are traversed.

Claims 9-11 stand rejected under 35 U.S.C. 103(a) as allegedly unpatentable over *Martin* (US 7,109,958) in view of *Park* (US 2004/0119673). Since claims 9-11 are dependent upon claim 8 and *Park* and *Martin* do not disclose all features of claim 8, these rejections are traversed.

Claims 12-15 stand rejected under 35 U.S.C. 103(a) as allegedly unpatentable over *Martin* (US 7,109,958) in view of *Park* (US 2004/0119673) and further in view of *AAPA* (Figures 2A~2C and page 4, paragraph [006] of the specification). Since claims 12-15 are dependent upon claim 8 and *Martin*, *Park*, and *AAPA* do not disclose the features of claim 8, the rejections of these claims are traversed.

Claims 22-23 and 25 stand rejected under 35 U.S.C. 103(a) as allegedly unpatentable over *Martin* (US 7,109,958) in view of *AAPA* (Figures 2A~2C and page 4, paragraph [006] of the specification). Since *Martin* and *AAPA* do not disclose claim 22, the rejection of claim 22 under 35 U.S.C 103(a) is believed to be improper. Claims 23 and 25 are dependent upon claim 22, these rejections should be withdrawn.

Finally, claim 24 stands rejected under 35 U.S.C. 103(a) as allegedly unpatentable over *Martin* (US 7,109,958) in view of *AAPA* (Figures 2A~2C and page 4, paragraph [006] of the specification) and further in view of *Park* (US 2004/0119673). Since claim 24 is dependent upon claim 22 and *Martin*, *AAPA*, and *Park* do not disclose claim 22, the rejection of claim 24 should be withdrawn.

Response To Claim Rejections Under 35 U.S.C. §102(e)

Claims 1 and 16 stand rejected under 35 U.S.C. 102(e) as being anticipated by *Park* (US 2004/0119673). Claim 1 has been cancelled rendering the rejection of that claim moot.

As amended herein, claim 16 recites.

16. A method of driving a liquid crystal display device comprising:
providing a plurality of gate lines formed in parallel to each other;
providing a plurality of source lines formed in parallel to each other
and orthogonal to the gate lines;
forming an array of cells in rows and columns, each of the cells
being disposed near an intersection of an N-th gate line and an M-th
source line, N and M being integers;
forming a first transistor and a second transistor in the each of the
cells;
**forming a first capacitor between an electrode and an (N-2)-th
gate line in the each of the cells;**
driving the first transistor through the (N-2)-th gate line; and
driving the second transistor through the N-th gate line.

(Emphasis added). *Park* fails to disclose at least the feature of “forming a first capacitor between an electrode and an (N-2)-th gate line in the each of the cells” such that the rejection of claim 16 under 35 U.S.C 102(e) should be withdrawn.

Moreover, as shown in Fig. 4 of *Martin*, pixel 18 (cell 51) only connects two gate lines 40 and 42 such that capacitor 46 of pixel 18 only connects to (N-1)th gate line (gate line 40, in which the gate line 42 is the N gate line). *Martin* fails to disclose the claimed features of “forming a first transistor and a second transistor **in the each of the cells,**” “**forming a first capacitor between an electrode and an (N-2)th gate line in the each of the cells,**” and “driving the first transistor through the (N-2)th gate line.” Hence, a person skill in the art would not been motivated to combine the teachings of

Park in view of *Martin* to realize the embodiments defined by claim 16. For at least this reason, claim 16 is not unpatentable over *Park* in view of *Martin*.

Response To Claim Rejections Under 35 U.S.C. §102(e)

Claim 8 stands rejected under 35 U.S.C. 102(e) as allegedly anticipated by *Martin* (US 7,109,958). "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). *Martin* does not disclose all limitations in the claim 8 such that the rejection should be withdrawn.

Independent claim 8 recites.

8. A liquid crystal display device comprising:
a plurality of gate lines formed in parallel to each other;
a plurality of source lines formed in parallel to each other and
orthogonal to the gate lines; and
an array of cells formed in rows and columns, each of the cells
disposed near an intersection of an N-th gate line and an M-th source
line, N and M being integers, further comprising:
**a first capacitor formed between an electrode and an
(N-2)-th gate line; and (Emphasis added)
a second capacitor formed between the electrode and
an (N-1)-th gate line.**

(*Emphasis added*). *Martin* at least fails to disclose the limitations as emphasized above, and for at least this reason, the rejection of claim 8 should be withdrawn.

The Office Action alleged that capacitors 46 and 58 of *Martin* respectively serve the first and the second capacitors in the claim 8 of the application. However, as shown in Fig. 4 of *Martin*, capacitor 46 is formed between a gate line 40 and a pixel 18 in the cell 51 and capacitor 58 is formed between a gate line 42 and another pixel 12 in another cell 60. Since capacitor 58 does not connect to the pixel 18, *Martin*, at least, does not

disclose the limitation in claim 8 that the two capacitors connect to the same pixel electrode, thus, the rejection of claim 8 under 35 U.S.C 102(e) should be withdrawn.

Dependent claims 9-15 are allowable for at least the reason that these claims depend from allowable independent claim 8. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

Response To Claim Rejections Under 35 U.S.C. §103(a)

Claims 2-4 stand rejected under 35 U.S.C. 103(a) as allegedly unpatentable over *Park* (US 2004/0119673) in view of *Martin* (US 7,109,958). "Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so." *ACS Hospital Systems, Inc., v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). Since *Park* and *Martin* are absent some teaching or suggestion to support the combination, the rejection of claim 2 under 35 U.S.C 103(a) should be withdrawn.

Independent claim 2, as amended herein, recites:

- 2. A liquid crystal display device comprising:
 - a plurality of gate lines formed in parallel to each other;
 - a plurality of source lines formed in parallel to each other and orthogonal to the gate lines;
 - an array of cells formed in rows and columns, each of the cells being formed near an intersection of one of the gate lines and one of the source lines;
 - a first transistor of each of the cells disposed at an N-th row and M-th column, N and M being integers, driven by an (N-2)-th gate line; and
 - a second transistor of each of the cells driven by an N-th gate line; and
 - a first capacitor of each of the cells formed between an electrode and the (N-2)-th gate line.**

(*Emphasis added*). Claim 2 patently defines over the cited art for at least the reason that the cited art fails to disclose at least the features emphasized above.

As recited in page 5, the Office Action states that Park fails to teach a capacitor formed between an electrode and the (N-2)-th gate line and capacitor 46 of *Martin* serve the first capacitor in the amended claim 2 of the application. However, as shown in Fig. 4 of *Martin*, pixel 18 (cell 51) only connects two gate lines 40 and 42 such that capacitor 46 of pixel 18 can only connect to (N-1)-th gate line (gate line 40, in which the gate line 42 is the N gate line). *Martin* also fails to teach two transistors in one cell, in which one is driven by an N-th gate line and the other one is driven by an (N-2)-th gate line. Since both *Park* and *Martin* fail to teach a capacitor formed between an electrode and the (N-2)-th gate line, a person skill in the art would not been motivated to combine the teachings of *Park* in view of *Martin* to have derived the embodiments defined by claim 2. Thus, for at least this reason, the rejection should be withdrawn.

Dependent claim 3 is allowable for at least the reason that this claim depends from allowable independent claim 2. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988). Although claim 3 has been amended, it is believed that no new matter is added in claim 3 of the application.

Claim 4 is cancelled such that the rejection of the invention under 35 USC 103(a) becomes moot. Since claim 4 has been cancelled, claim 5 is amended to depend upon claim 3. Dependent claims 5-7 are allowable for at least the reason that these claims depend from allowable independent claim 2. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

Response To Claim Rejections Under 35 U.S.C. §103(a)

Claim 17 stands rejected under 35 U.S.C. 103(a) as allegedly unpatentable over *Park* (US 2004/0119673) in view of *Martin* (US 7,109,958).

As independent claim 16 is allowable over the prior art of record (for reasons set forth above), then its dependent claims 17-21 are allowable as a matter of law, because these dependent claims contain all features/elements/steps of their respective independent claim 16. *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

Response To Claim Rejections Under 35 U.S.C. §103(a)

Claims 22 stands rejected under 35 U.S.C. 103(a) as allegedly unpatentable over *Martin* (US 7,109,958) in view of *AAPA* (Figures 2A~2C and page 4, paragraph [006] of the specification). In order for a claim to be properly rejected under 35 U.S.C. §103, the teachings of the prior art reference must suggest all features of the claimed invention to one of ordinary skill in the art. See, e.g., *In re Dow Chemical*, 837 F.2d 469, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988); *In re Keller*, 642 F.2d 413, 208 U.S.P.Q. 871, 881 (C.C.P.A. 1981).

Independent claim 22 recites.

- 22. A method of driving a liquid crystal display device comprising:
 - providing a plurality of gate lines formed in parallel to each other;
 - providing a plurality of source lines formed in parallel to each other and orthogonal to the gate lines;
 - forming an array of cells in rows and columns, each of the cells being disposed near an intersection of a corresponding N-th gate line and a corresponding M-th source line, N and M being integers;
 - providing a signal including a first voltage level and a second voltage level from the M-th source line;
 - selecting an (N-2)-th gate line;
 - charging a first capacitor of the each of the cells to a third voltage level** between the first and second voltage levels after a selection period of the (N-2)-th gate line;

selecting an (N-1)-th gate line;
keeping an electrical potential of a terminal of the first capacitor at the third voltage level after a selection period of the (N-1)-th gate line;
selecting the N-th gate line; and
charging the first capacitor to the first voltage level after a selection period of the N-th gate line from the third voltage level.

(Emphasis added).

Independent claim 22 is allowable for at least the reason that the combination of *Martin* in view of *AAPA* does not disclose, teach, or suggest the features that are highlighted in claim 22 above. More specifically, since *Martin* in view of *AAPA* does not disclose that a capacitor is charged to a third voltage between a first voltage and a second voltage, then the potential of the capacitor is kept at the third voltage, and then the capacitor is charged from the third voltage to the first voltage. Consequently, the combination of *Martin* in view of *AAPA* does not render claim 22 obvious, and the rejection should be withdrawn.

Because independent claim 22 is allowable over the prior art of record, its dependent claims 23-25 are allowable as a matter of law, for at least the reason that these dependent claims contain all features/elements/steps of their respective independent claim 1. *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

CONCLUSION

In light of the foregoing amendments and for at least the reasons set forth above, Applicant respectfully submits that all objections and/or rejections have been traversed, rendered moot, and/or accommodated, and that the now pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested.

No fee is believed to be due in connection with this submission. If, however, any fee is believed to be due, you are hereby authorized to charge any such fee to deposit account No. 20-0778.

Respectfully submitted,

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